Chapter 20

Children and Adolescents Admitted to Specialty Mental Health Care Programs in the United States, 1986 and 1997

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Introduction

Mental disorders are an important but often overlooked social welfare problem for children and adolescents in the United States today. Recent estimates suggest that as many as 20 percent of children and adolescents may have a mental health problem that can be identified and treated and at least 10 percent—or as many as six million young people—may have a *serious* mental health problem (Center for Mental Health Services [CMHS], 1998a). Costello and Messer (as cited in Friedman et al., 1996) found pronounced differences in the prevalence of mental disorders according to sociodemographic characteristics of youth, with rates of serious emotional disturbances twice as high in lower socioeconomic groups as in higher ones.

If not treated early, mental disorders can severely disrupt the capacity of youth to function socially, academically, and emotionally (CMHS, 1998b, 1998c). Seriously emotionally disturbed youth enter the transition from adolescence to adulthood delayed in their developmental maturation relative to nondisabled peers (Davis and Vander Stoep, 1997). Unfortunately, an estimated two-thirds of all young people with emotional problems do not receive the services they need (U.S. Department of Health and Human Services, 1999). The increasing numbers of youth in serious and immediate need of effective mental health intervention face a system that often presents access barriers, lacks adequate alternatives to inpatient care, and is poorly linked to other services. Mental health service organizations and their treatment personnel struggle to develop and maintain equitable and coordinated services tailored to the unique needs of individual children along a full continuum of care. Failures in developing these systems compromise the mental health status of youth, leaving them vulnerable to relapse and deterioration; frustrate families when they cannot get help for their troubled children; and discourage mental health clinicians who are constrained from providing effective help.

Throughout the past 15 years, States and localities have been building community-based systems of care as a more appropriate alternative to hospitalization and promoting family involvement in the processes of care for their children. Some States, such as California, New York, Connecticut, and Vermont, have developed integrated, county-based outpatient systems of care that appear to have been successful in reducing rates of inpatient psychiatric hospitalization (Evans et al., 1997). With experimentally controlled innovative family interventions, others have created successful alternatives to inpatient care (Henggeler et al., 1997). In most areas of the country, however, financial and political realities prevent such initiatives from developing. Without immediate attention to these problems, we can expect hospital admissions for mental health care for children and adolescents to continue to increase (Burns, 1991; Friedman, 1986; Kiesler and Simpkins, 1991; Pottick, et al., 2000; Thompson et al., 1986). The situation is particularly acute in socially

stressed and resource-deprived communities, where, in the absence of intensive services, youth ultimately require stabilization in inpatient settings or, once in inpatient care, are discharged to communities that lack the capacity to prevent successive readmissions.

Recognizing the urgent need to partner with State and local policymakers and providers to develop community capacity to create service systems that work so that children are served appropriately according to their needs, Rutgers University partnered with the Center for Mental Health Services (CMHS) and the Annie E. Casey Foundation in January 2000. The purpose of the joint venture is to analyze the newly available, large-scale, nationally representative CMHS survey of children in organized inpatient, outpatient, and residential treatment care in the United States to (1) provide national mental health indicators to the Casey Foundation's State-based KIDS COUNT initiative and (2) assess equity in access to care, service delivery, and outcomes in the community. These analyses will provide timely and objective information to policymakers, child advocacy groups, and Casey affiliates to foster policies and programs that encourage appropriate placement, promote equal treatment of the most seriously ill and poor, and provide continuity of care and smooth transitions.

The 1997 Client/Patient Sample Survey (1997 CPSS) provides detailed information on the status of youth and adults in mental health care. With an over-sample of more than 4,000 youth admitted for services over the course of the year, the 1997 CPSS allows reliable estimates of subgroups of the youth population (Milazzo-Sayre et al., 2001). The most recent data available, the 1997 CPSS is exceptional in its breadth of coverage of each child's illness, family background and living situation, involvement in the juvenile justice and child welfare systems, and transitions across service settings. All the youth surveyed were seen at some type of community mental health facility, whether a hospital, community mental health center, or outpatient clinic. Estimates of youth served, therefore, are conservative because they do not include youth who consulted only with individual therapists and paid for that treatment with private insurance or personal funds (see Appendix B).

Historical Analysis

This chapter capitalizes on the availability of historical data on service use information from the 1986 CPSS (Manderscheid and Sonnenschein, 1990, 1992). To provide information on the effectiveness of reforms in the mental health service delivery system for youth in the United States (Stroul and Friedman, 1986), we answer two key policy questions about changes in the landscape of mental health services for youth. First, if policies and programs designed to make mental health services more accessible for youth have been successful, there should be a substantial increase in the numbers of users and rate of mental health service use in the child and adolescent population. Has the use of mental health care services changed for youth from 1986 to 1997? In other words, how *many* youth received care in those two years, and have the *rates* of mental health care per 100,000 youth in the United States changed from 1986 to 1997?

Second, if State and Federal initiatives to provide innovative outpatient services as an alternative to inpatient care have been successful, we would expect to see a reduction in inpatient utilization but an increase in outpatient utilization. Relative to outpatient care, have the number and rate of children and adolescents in inpatient care decreased between 1986 and 1997?

Portrait of Youth Admitted for Services

From the 1997 national data, we describe the characteristics of 4,014 sampled youth, representing a weighted estimate of 1,314,938 children and adolescents, who were admitted to organized specialty mental health services in the United States, and the rate of their service use per 100,000 children and adolescents. This chapter also details the characteristics of youth admitted to inpatient, outpatient, and residential care facilities in the United States and uses SUDAAN-adjusted chi-square tests of significance to examine the extent to which youth characteristics vary among types of settings to which youth are admitted (Shah, Barnwell and Bieler, 1996). We answer four key questions with these data:

(1) How many youth—preschoolers, school-age children, and adolescents—are admitted to inpatient, outpatient, and residential care in the United States for mental health services, and what is the number of youth, by age, race-ethnicity, and gender, per 100,000 in the youth population using services?

(2) What is the sociodemographic profile of youth in mental health services?

(3) What kinds of mental health conditions do these youth have, and how severe are their problems?

(4) What are the youths' referral routes to services and prior service histories?

The answers will provide much-needed information about the current profile of youth in our organized specialty mental health system today to guide appropriate program planning, service delivery, and treatment.

Results

Changes in the Utilization of Mental Health Services Among Youth

Question 1: How much has the use of mental health care services changed for youth from 1986 to 1997?

Figure 1 displays the estimated number of youth admitted to mental health services in the United States based on 1986 and 1997 CPSS surveys. More than 1.3 million children under the age of 18 were admitted to mental health services in the United States during 1997, which is almost double the estimate (+87.1 percent) of the 702,815 children who were admitted to treatment in 1986 (z = 10.3, $p < .001$). Staffing in mental health facilities, however, has not kept pace with the sheer magnitude of youth being served.

Figure 1 also shows the admission rates per 100,000 U.S. youth population in 1986 and 1997. The rate at which youth were admitted to organized services jumped by 69 percent during this 11-year period, increasing from 1,118 per 100,000 children in 1986 to 1,889 per 100,000 in 1997 (z = 8.67, $p <$ .001). Although we do not know if need for treatment has changed, the significant increase suggests a change in access rather than a change in need. U.S. programs and policies designed to make mental health services more accessible to youngsters appear to have been working, although use of services may not have increased equally among poor or minority children or those in socially stressed or resource-deprived communities.

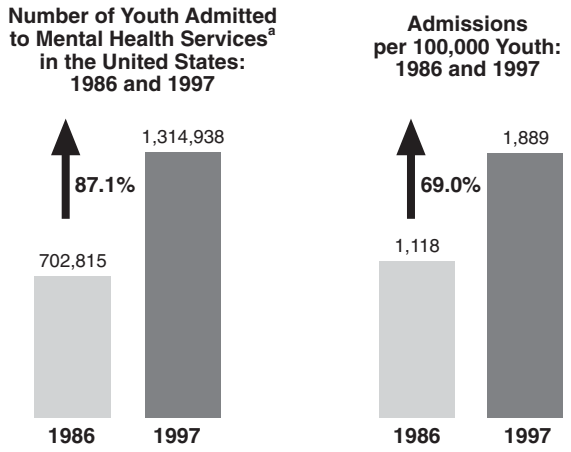

Figure 1. Youth Admissions to Mental Health Services.

Original Source: 1986 Client/Patient Sample Survey of Inpatient, Outpatient and Partial Care Programs, Survey and Reports Branch, Division of Biometry and Applied Sciences, National Institute of Mental Health; 1997 Client/Patient Sample Survey of Inpatient, Outpatient, and Residential Care Programs, Survey and Analysis Branch, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services.

[a] 1986 and 1997 numbers include all youth in inpatient care and less than 24-hour care (outpatient and partial care); 1997 numbers also include youth in residential care settings.

Note: Youth population includes all children and adolescents under age 18; U.S. territories of Puerto Rico, Guam, and the U.S. Virgin Islands were excluded. 1986 population estimate (n = 62,865,654) from the U.S. Bureau of the Census (http://eire.census.gov/popest/archives/state/stiag/stiag786.txt).

Question 2: Relative to outpatient care, have the number and rate of children and adolescents admitted to inpatient care decreased between 1986 and 1997?

In 1986, 584,900 youth were admitted to outpatient care, including partial care services, and 117,915 were admitted to inpatient care (see figure 2). By 1997, these numbers increased to 962,813 and 286,176, respectively (z = 7.6, $p < .001$ and z = 7.3, $p < .001$, respectively). There were substantial increases in both settings in number and rates. The rates increased from 930 to 1,383 per 100,000 youth in the outpatient sector (z = 5.9, $p < .001$) and from 188 to 411 in the inpatient sector (z = 6.96, $p < .001$). Thus, the rate of inpatient care increased almost 120 percent, while the rate of outpatient care increased by less than 50 percent. Contrary to expectations, inpatient care increased at a greater rate

than outpatient care. However, the increase in the inpatient rate dwarfed that of outpatient care between 1986 and 1997. Despite reforms, youth do not appear to be diverted away from inpatient care as was planned; in fact, they are hospitalized more than before. Caution should be exercised, however, about concluding that the reforms have failed. Simultaneous and massive changes in insurance coverage over the decade may have acted as a disincentive to outpatient utilization. With concerns for liability, insurance companies are likely to be sensitive to restrictions on access to inpatient care for youth who are seriously mentally ill and potentially dangerous to themselves or others. Thus, inpatient care may be more accessible than outpatient care.

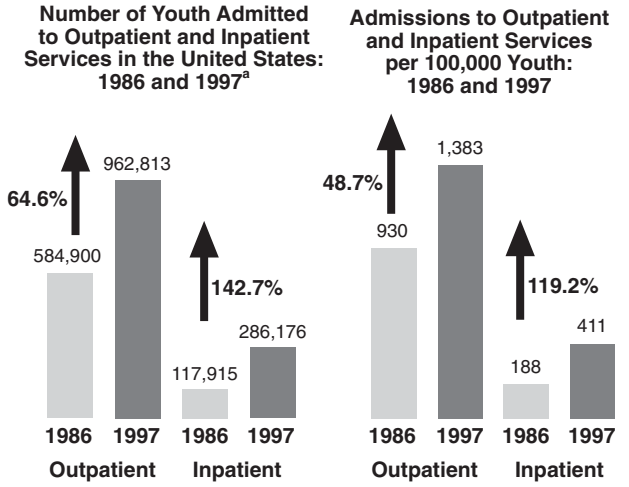

Figure 2. Youth Admissions to Outpatient and Inpatient Services.

Original Source: 1986 Client/Patient Sample Survey of Inpatient, Outpatient and Partial Care Programs, Survey and Reports Branch, Division of Biometry and Applied Sciences, National Institute of Mental Health; 1997 Client/Patient Sample Survey of Inpatient, Outpatient, and Residential Care Programs, Survey and Analysis Branch, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services.

[a] 1986 and 1997 outpatient services include partial care and may include unidentified duplicated cases.

Note: Youth population includes all children and adolescents under age 18; U.S. territories of Puerto Rico, Guam, and the U.S. Virgin Islands were excluded. 1986 population estimate (n = 62,865,654) from the U.S. Bureau of the Census (http://eire.census.gov/popest/archives/state/stiag/stiag786.txt); 1997 population estimate (n = 69,603,989) from the U.S. Bureau of the Census (http://www.census.gov/population/estimates/state/stats/st-99-12.txt).

National Estimates of Admissions to Inpatient, Outpatient, and Residential Care

The estimated rate of 1,897 admissions per 100,000 youth means that 1 out of every 50 youth in the Nation was admitted to organized mental health services. Approximately half of them were adolescents ages 13 to 17 (n = 666,033), 40 percent were youth ages 6 to 12 (n = 529,364), and about one-tenth were preschoolers ages 0 to 5 (n = 119,541). The rate of service use for preschoolers was 517 admissions per 100,000 preschoolers, or 1 in 193; for the 6- to 12-year-olds, the rate was 1,943 admissions per 100,000, or 1 in 50; and for adolescents, it was 3,462 admissions per 100,000, or 1 in 30. Thus, elementary school-age children were 3.8 times more likely and adolescents 6.7 times more likely to use services than preschoolers.

Of youth admitted to organized mental health care, a small percentage (five percent) received services in residential care, 21.8 percent used inpatient services, and the vast majority, 73.2 percent, received outpatient services. Adolescents comprised the largest proportion of inpatient and residential care cases (67.6 and 75.5 percent, respectively). Roughly equal proportions of the outpatient caseload were 6- to 12-year-olds (44.7 percent) and 13- to 17-year-olds (43.9 percent). The age groups were distributed significantly differently across the three program service settings (χ^2 = 77.2, df = 4, p < 0.0001).

Sociodemographic Characteristics of Youth Admitted to Inpatient, Outpatient, and Residential Care Populations

Gender and Race-Ethnicity. As shown in table 1, more boys (55.6 percent) than girls (44.5 percent) were admitted to mental health services, and the rate of admission per 100,000 youth was greater for boys than girls (2,048 versus 1,722). Although proportionally more Whites (64.8 percent) than Blacks (18.9 percent) and Hispanics (14.1 percent) were admitted for mental health services, the population-based rates show a much higher admission rate for Blacks (2,441 per 100,000) than Whites (1,868 per 100,000) and Hispanics (1,794 per 100,000). Neither characteristic was significantly associated with program service setting (gender: χ^2 = 3.84, df = 2, p = 0.15; race-ethnicity: χ^2 = 2.95, df = 6, p = 0.81).

Living Situation. Table 1 also shows that the majority of youth admitted for mental health servic-

es lived with at least one biological, step, or adoptive parent (70.5 percent), and 10.8 percent lived in kinship care arrangements (e.g., with aunts and uncles, grandparents). Fully 13.3 percent lived in custodial arrangements (foster care, group homes, jail, or juvenile detention). According to the fall 1996 U.S Census, only 4 percent of youth under age 18 lived with neither parent (Fields, 2001). Thus, youth living away from one or both parents were disproportionately admitted to specialty mental health services. Living situation was significantly associated with admission to inpatient, outpatient, or residential care ($\chi^2 = 80.19$, df = 14, $p < 0.0001$). Slightly more than half (53.0 percent) the youth admitted to residential care lived with any parent, in striking contrast to youth in inpatient (72.5 percent) or outpatient (71.1 percent) settings. Moreover, youth admitted to residential care were less likely to live in kinship arrangements (4.1 percent) than youth in inpatient settings (9.1 percent) or outpatient settings (11.8 percent). Thus, more than 40 percent of youth admitted to residential care lived out of the home away from relatives. Prior to admission, the majority lived in group homes (17.2 percent), jail or juvenile detention (12.7 percent), or foster care (8.3 percent). By contrast, 18.4 percent of inpatient youth and 17.1 percent of outpatient youth lived away from relatives prior to admission. Of the inpatient youth who did not live with relatives, 13.2 percent lived in group homes or foster care prior to their hospital admission, as did 9.5 percent of the outpatient youth.

Children in custodial arrangements may be particularly vulnerable because unstable and insecure living arrangements are likely to interfere with use of services, quality of treatment, and timely and smooth transitions between community services and home.

Source of Payment for Services. More than half (57.6 percent) the youth admitted were poor; as table 1 shows, their care was paid for by Medicaid (42.4 percent), other public insurance (10.1 percent), or charity care (5.1 percent). Less than a third (30.5 percent) had private insurance, and only 8.9 percent paid with personal resources. Source of payment for services was strongly associated with program service setting ($\chi^2 = 99.11$, df = 10, $p < 0.0001$). Close to half the hospitalized youth (48.3 percent) were covered by private insurers, whereas only 26.4 percent of the outpatient youth and 13.8 percent of the residential care youth were. On the other hand, more than half the youth in residential care (52.8 percent) had other public assistance as their primary source of payment, whereas only 5.3 percent of youth in inpatient settings and 8.6 percent of youth in outpatient settings relied on other public assistance for services. Finally, far more outpatient youth paid for services with Medicaid (44.8 percent) or charity care (6.2 percent) than did inpatient (Medicaid: 37.6 percent; charity care: 2.4 percent) or residential care youth (Medicaid: 29.4 percent; charity care: too few cases to estimate reliably). Personal resources were more likely to be the payment source for outpatient services (11.3 percent) than for hospital (2.4 percent) or residential care (2.2 percent) services.

These results suggest that modifications in existing Medicaid policy and other public mental health insurance programs could have a profound impact on the availability of mental health services for the Nation's youth.

Illness Characteristics of Youth Admitted to Inpatient, Outpatient, and Residential Care Populations

Psychiatric Diagnosis. Table 2 shows that more than two-thirds of youth admitted to organized mental health services had one of three diagnoses: disruptive behavior disorders (30.8 percent), mood disorders (20.9 percent), or adjustment disorders (16.4 percent). Youth were distributed differently across program service setting on the basis of diagnosis ($\chi^2 = 178.04$, df = 18, $p < 0.001$). Youth with mood disorders were much more likely to receive inpatient care (44.3 percent) than residential (26.2 percent) or outpatient care (13.5 percent). Youth with disruptive behavior disorders were much more likely to receive residential care (33.1 percent) or outpatient (34.6 percent) than inpatient care (17.4 percent). Youth with adjustment disorders were much more likely to be admitted to outpatient settings (19.9 percent) than to either inpatient (6.7 percent) or residential care (6.4 percent) settings.

Comorbidity. Almost one-third (29.6 percent) of the youth admitted for care were diagnosed with two disorders; 62.8 percent were diagnosed with one; and 7.6 percent entered the youth service system with no diagnosis or a deferred diagnosis. Comorbidity was significantly associated with program service setting ($\chi^2 = 44.72$, df = 4, $p < 0.0001$). The proportion of youth with two diagnoses was similar in inpatient and residential settings (43.3 and 40.6 percent, respectively) and was higher than the proportion in outpatient care, where only one-quarter were diagnosed with two disorders. About two-thirds (67.0 percent) of the youth in outpatient

Table 1. Sociodemographic characteristics of youth admitted[a] to organized mental health care in the United States by program service setting in 1997

	Program Service Setting							
	Inpatient *(N = 286,176)*		**Outpatient** *(N = 962,813)*		**Residential care** *(N = 65,949)*		**Total** *(N = 1,314,938)*	
	%	**Standard Error**	*%*	**Standard Error**	*%*	**Standard Error**	*%*	**Standard Error**
Age Group								
0–5 years	3.0	1.4	11.4	0.9	1.8	0.9	9.1	0.7
6-12 years	29.5	3.0	44.7	1.4	22.7	2.7	40.3	1.3
13-17 years	67.6	3.2	43.9	1.5	75.5	2.8	50.7	1.4
Gender								
Male	50.8	3.3	56.6	1.3	60.9	5.3	55.6	1.2
Female	49.2	3.3	43.4	1.3	39.1	5.3	44.5	1.2
Race-ethnicity[a]								
Whites	67.4	3.4	64.0	1.8	64.9	4.8	64.8	1.5
Blacks	16.1	2.2	19.6	1.4	20.9	3.6	18.9	1.2
Hispanics	14.0	2.9	14.3	1.2	11.8	3.2	14.1	1.1
All others	2.6	1.0	2.1	0.4	2.3	0.8	2.2	0.3
Region of Country								
Northeast	22.0	4.2	23.1	2.3	21.4	6.3	22.8	1.9
South	40.2	5.8	29.5	2.6	21.1	6.3	31.4	2.3
Midwest	22.6	5.2	29.6	2.7	39.5	9.5	28.6	2.4
West	15.2	4.1	17.8	2.2	18.0	5.5	17.3	1.9
Living Situation								
Parent(s)[b]	72.5	2.8	71.1	1.8	53.0	5.2	70.5	1.5
Kinship care[c]	9.1	1.8	11.8	1.2	4.1	1.2	10.8	0.9
Foster care	4.0	1.0	6.3	0.8	8.3	1.6	5.9	0.6
Group home	9.2	1.5	3.2	0.5	17.2	2.5	5.2	0.5
Jail/juvenile detention	0.8	0.3	0.6	0.2	12.7	2.9	1.2	0.2
Other[d]	*	*	6.0	1.3	*	*	5.1	1.0
Unknown	1.6	0.8	1.0	0.2	2.5	1.0	1.2	0.2
Primary Payment Source								
Medicaid	37.6	3.1	44.8	1.9	29.4	6.1	42.4	1.6
Other public assistance	5.3	1.2	8.6	1.0	52.8	7.3	10.1	0.9
Charity care	2.4	1.0	6.2	1.0	*	*	5.1	0.8
Private insurance	48.3	4.0	26.4	1.9	13.8	5.1	30.5	1.7
Personal resources	2.4	1.1	11.3	1.0	2.2	1.0	8.9	0.7
Unknown/missing	3.9	1.3	2.8	0.8	*	*	2.9	0.7

Note: Youth population includes all children and adolescents under age 18. This table represents 4,014 observations (1,314,938 weighted observations) from the 1997 Client Patient Sample Survey. U.S. territories of Puerto Rico, Guam, and the U.S. Virgin Islands were excluded (21 observations).

[a] Whites, Blacks, and all others exclude Hispanics.
[b] Parent(s) includes at least one biological, step, or adoptive parent.
[c] Kinship care includes aunts, uncles, brothers and sisters, cousins, and grandparents.
[d] Other living situation includes alone, sibling (biological or adoptive), homeless, family acquaintance, other nonrelative, and spouse.

* Estimate is based on five or fewer sample cases or has a relative standard error of 50 percent or higher; therefore, it is not shown because it does not meet standards of reliability.

settings had one diagnosis only, in contrast to approximately half the youth in inpatient settings (52.3 percent) and residential care (48.0 percent). Youth with no assigned diagnoses or deferred diagnoses were more likely to be in residential care than in outpatient or inpatient settings (11.5 percent vs. 8.3 and 4.4 percent, respectively).

To the extent that two diagnoses signal more treatment need, the higher rates of comorbidity in inpatient and residential care are appropriate. However, youth with dual disorders are difficult to treat because interventions known to be effective generally target specific single disorders.

Severity of Illness. The ten-item Global Assessment of Functioning (GAF) scale measured functional impairment based on Axis V of the Diagnostic and Statistical Manual of Mental Disorders (4th ed.) (DSM-IV) (American Psychiatric Association, 1994). Possible scores range from 1 to 100, indicating severe impairment (needs constant supervision) at the lower end and superior functioning in all social areas at the upper end. In this sample, the GAF ranged from 5 to 85 (mean 54.4). Using CMHS standards of scores 1 to 50 for a conservative estimate of severe functional impairment due to emotional disturbance (Friedman et al., 1996), we found that nearly 40 percent of the youth were severely impaired. Two-thirds of the youth were included when the score was set to capture more moderate levels of impairment (scores between 1 and 60). The latter group comprises children and adolescents with serious emotional disturbance using the national definition adopted by CMHS.

As shown in table 2, GAF scores were associated significantly with program service settings (GAF $\leq$ 50: $\chi^2 = 38.82$, $df = 4$, $p < 0.0001$; GAF $\leq$ 60: $\chi^2 = 35.58$, $df = 4$, $p < 0.0001$). Youth with the most serious impairment were more likely to be admitted to inpatient settings or residential care than to outpatient care (54.7 and 53.7 percent vs. 31.8 percent, respectively). The distribution is similar when the GAF score is set at 60 or lower (79.4 and 76.0 percent vs. 61.2 percent, respectively). Given that lower GAF scores indicate greater treatment need, these distributions suggest appropriate placement.

Presenting Problems. Table 3 displays the presenting problems of youth who entered the mental health service system. About half (49.7 percent) the youth experienced problems with family members. Nearly half (46.1 percent) had depressed mood or other problems related to depression and anxiety, such as eating disturbances, sleep problems, grief and loss reactions, or post-traumatic stress reactions. In addition, 42.7 percent had problems coping with school, and 39.9 percent had problems with aggression. Nearly one-quarter (24.0 percent) had threatened or attempted suicide, and fully 20 percent were victims of abuse or neglect. Other youth entered services with skill deficits (14.5 percent), alcohol or drug use problems (15.4 percent), or social withdrawal (16.1 percent). Nearly one-fifth (19.0 percent) had run away, set fires, exhibited sexually aggressive or other behaviors, or been in contact with the criminal justice system.

The five most common presenting problems were the same for youth admitted to outpatient and residential care: family problems, aggression, school problems, depressed or anxious mood, and abuse or neglect. The most common problems of youth in inpatient care were quite similar, except abuse or neglect was not one of the five most common presenting problems because suicidal thoughts or attempts were so prevalent (55.4 percent).

Although the problems ranked similarly across settings, the magnitude of the proportions differed substantially, such that, with the exception of skill deficits and social withdrawal, all presenting problems were significantly associated with type of service setting. Moreover, youth in residential care settings had significantly higher rates of six of the eight presenting problems that were significantly associated with service setting. Results show that youth in residential care were far more likely to have had family problems (72.4 percent) than youth in inpatient (47.3 percent) or outpatient (48.9 percent) settings ($\chi^2 = 14.0$, $df = 2$, $p < 0.0001$). Youth in residential care were also more likely than those in inpatient or outpatient settings to have had problems coping in school (57.2 percent vs. 44.4 and 41.3 percent, respectively; $\chi^2 = 6.31$, $df = 2$, $p < 0.05$). The rates of these problems were not significantly different for the inpatient and outpatient youth.

Table 3 also shows that youth in residential care were more likely to have been victims of abuse and to have had problems with aggressive or delinquent behaviors. Specifically, they were more likely to have been the victims of abuse or neglect than youth admitted for inpatient or outpatient care (47.2 percent vs. 20.3 and 18.6 percent, respectively; $\chi^2 = 22.6$, $df = 2$, $p < 0.0001$). Comparing youth admitted to residential care versus inpatient or outpatient care, aggression (66.2 percent vs. 48.7 and 35.5 percent), delinquent behavior (55.6 percent vs. 24.5 and 14.8 percent), and problems with alcohol or drug use (31.2 percent vs. 25.7 and 11.3 percent) were notably higher among the youth admitted to residential care ($\chi^2 = 30.8$, 51.7, 38.5, respectively; all comparisons, $df = 2$, $p < 0.0001$). For all these

Table 2. Illness characteristics of youth[a] admitted to organized mental health care in the United States by program service setting in 1997

	Program Service Setting							
	Inpatient *(N = 286,176)*		**Outpatient** *(N = 962,813)*		**Residential care** *(N = 65,949)*		**Total** *(N = 1,314,938)*	
	%	**Standard Error**	*%*	**Standard Error**	*%*	**Standard Error**	*%*	**Standard Error**
Severity of Illness[b]								
GAF ≤ 50[c]	54.7	3.8	31.8	1.7	53.7	5.8	37.9	1.6
GAF ≤ 60[d]	79.4	3.2	61.2	1.8	76.0	5.5	65.9	1.5
Missing	6.9	2.4	13.9	1.7	13.9	4.3	12.4	1.4
Number of Diagnoses								
Two diagnoses	43.3	3.0	24.7	1.3	40.6	4.2	29.6	1.2
One diagnosis	52.3	3.0	67.0	1.4	48.0	4.6	62.8	1.2
No diagnosis	4.4	1.2	8.3	0.9	11.5	3.8	7.6	0.7
Diagnostic Disorders								
Disruptive behavior	17.4	2.6	34.6	1.4	33.1	3.8	30.8	1.2
Mood	44.3	3.3	13.5	1.0	26.2	4.4	20.9	1.1
Anxiety	4.9	1.2	8.2	0.7	8.9	2.4	7.5	0.6
Developmental and pervasive	4.3	1.3	5.6	0.7	4.0	1.3	5.2	0.6
Social conditions (V code)	*	*	4.8	0.6	*	*	3.6	0.4
Alcohol or drug use	4.9	1.3	2.9	0.4	3.2	1.3	3.4	0.4
Psychotic	7.2	2.0	1.3	0.5	1.8	0.8	2.6	0.6
Personality	5.6	1.3	0.9	0.2	*	*	2.1	0.3
No, deferred, or other diagnosis	4.4	1.2	8.3	0.9	11.5	3.8	7.6	0.7

Note: Youth population includes all children and adolescents under age 18. This table represents 4,014 observations (1,314,938 weighted observations) from the 1997 Client Patient Sample Survey. U.S. territories of Puerto Rico, Guam, and the U.S. Virgin Islands were excluded (21 observations).

[a] Youth population includes all children and adolescents under age 18.
[b] GAF is Global Assessment of Functioning. Severity of illness cutoff points from Manderscheid, R. M., & Sondheimer, D. L. (1996).
[c] This score represents a less inclusive, more stringent definition of "seriously emotionally disturbed" youth. Its narrative description is, "Moderate degree of interference in functioning in most social areas of severe impairment of functioning in one area, such as might result from, for example, suicidal preoccupation and ruminations, school refusal and other forms of anxiety, obsessive rituals, major conversion symptoms, frequent anxiety attacks, frequent episodes of aggressive or other ant-social behavior with some preservation of meaningful social relationships."
[d] This score represents a more inclusive, less conservative definition of "seriously emotionally disturbed" youth. Its narrative description is, "Variable functioning with sporadic difficulties or symptoms in several but not all social areas. Disturbance would be apparent to those who encounter the child in a dysfunctional setting or time but not to those who see the child in settings in where functioning is appropriate."

* Estimate is based on five or fewer sample cases or has a relative standard error of 50 percent or higher; therefore, it is not shown because it does not meet standards of reliability.

Table 3. Presenting problems of youth admitted to organized mental health care in the United States by program service setting in 1997

	Program Service Setting							
	Inpatient (N = 286,176)		Outpatient (N = 962,813)		Residential care (N = 65,949)		Total (N = 1,314,938)	
	%	Standard Error	%	Standard Error	%	Standard Error	%	Standard Error
Presenting Problems[a]								
Family Problems	47.3	3.5	48.9	1.8	72.4	4.1	49.7	1.6
Depressed or anxious mood[b]	64.5	3.5	40.0	1.6	55.7	4.6	46.1	1.5
School coping	44.4	3.6	41.3	1.6	57.2	5.6	42.7	1.5
Aggression	48.7	3.6	35.5	1.5	66.2	4.5	39.9	1.4
Suicidality	55.4	3.1	14.3	1.3	27.8	3.3	24.0	1.3
Abuse or neglect victim	20.3	2.5	18.6	1.2	47.2	4.2	20.4	1.1
Alcohol or drug use	25.7	2.9	11.3	0.9	31.2	3.8	15.4	1.0
Skill deficits	10.1	2.3	14.8	1.5	23.7	5.7	14.5	1.2
Social withdrawal	17.0	3.4	15.4	1.5	19.7	3.7	16.1	1.3
Delinquent behavior[c]	24.5	2.4	14.8	1.0	55.6	4.2	19.0	1.0

Note: Youth population includes all children and adolescents under age 18. This table represents 4,014 observations (1,314,938 weighted observations) from the 1997 Client Patient Sample Survey. U.S. territories of Puerto Rico, Guam, and the U.S. Virgin Islands were excluded (21 observations).

[a] Percentages do not add up to 100 because multiple presenting problems could be coded for each child.
[b] Index includes depressed mood, eating disturbance, post-traumatic stress, phobia, grief and loss, sleep problems, anxiety, and self-harm.
[c] Index includes runaway, fire-setting, delinquency, abuse perpetrator, sexual aggression, and involvement with juvenile justice system.

presenting problems, there is a consistent pattern: the highest rates were reported for the youth in residential care, followed by inpatient care, and then outpatient care.

A different pattern appears for problems related to depressed or anxious mood and suicide attempts or thoughts: youth in inpatient care had the highest rates, followed by residential care, followed by outpatient care. The reported rates of depressed or anxious mood range from a high of 64.5 percent for youth in inpatient care to 40 percent for youth in outpatient care ($\chi^2 = 41.78$, $df = 2$, $p < 0.0001$). The difference across groups is more dramatic for youth who have threatened or attempted suicide: 55.4 percent of youth admitted to inpatient settings and 14.3 percent of youth admitted to outpatient services ($\chi^2 = 117.10$, $df = 2$, $p < 0.0001$).

The high prevalence of presenting problems among youth with psychiatric illness suggests that youth enter the mental health system with more than psychiatric problems. These factors seriously compromise and complicate recovery and put youth at greater risk for long-term mental illness.

Prior Service History. A majority of youth (61.2 percent) who were admitted to mental health services had prior contact with mental health providers (table 4). However, the distribution across settings varied widely ($\chi^2 = 122.7$, df = 2, $p < 0.0001$). Of youth in residential care, 88.2 percent had any prior service, as did approximately 84 percent of youth in inpatient care. About half the youth who received outpatient care had prior mental health service (51.9 percent).

Looking at the youth who had any prior service, regardless of the current setting, most of the utilization had occurred in an outpatient mental health care program (42.6 percent) or with a private practice mental health professional (39.3 percent). However, across settings, the utilization patterns suggest that youth were admitted with markedly different prior mental health system experiences. With the exception of "other" prior service, all types of prior service differ significantly from current service setting ($p < .0001$). For example, more than half the youth admitted to inpatient care had received prior mental health care from a private practice

Table 4. Presenting problems of youth admitted to organized mental health care in the United States by program service setting in 1997

	Admissions											
	Inpatient (N = 286,176)			Outpatient (N = 962,813)			Residential care (N = 65,949)			Total (N = 1,314,938)		
	%	(SE)	Sample N	%	(SE)	Sample N	%	(SE)	Sample N	%	(SE)	Sample N
Prior Service												
Any Prior Service	83.7	2.7	534	51.9	1.8	1,445	88.2	4.4	343	61.2	1.5	2,322
Among Prior Service												
Outpatient	33.3	3.8	184	48.5	2.6	713	35.2	4.9	107	42.6	2.0	1004
Private doctor	55.4	4.0	273	31.1	2.4	457	36.4	5.0	105	39.3	1.9	835
Inpatient	42.4	3.4	261	26.9	1.9	401	53.9	6.0	173	33.8	1.7	835
Residential care	13.2	2.0	89	6.8	0.9	126	34.6	4.1	122	10.8	1.0	337
Type unknown	1.8	0.7	11	7.9	1.1	106	2.2	0.9	13	5.6	0.7	130
Other	2.3	0.9	11	4.7	0.9	58	8.8	4.0	15	4.2	0.4	84

Note: Youth population includes all children and adolescents under age 18. This table represents 3,732 observations (1,217,774 weighted observations) from the 1997 Client Patient Sample Survey. U.S. territories of Puerto Rico, Guam, and the U.S. Virgin Islands were excluded (21 observations).

mental health professional (55.4 percent), compared with roughly one-third of the youth admitted to outpatient care (31.1 percent) and another third to residential care (36.4 percent) settings ($\chi^2 = 28.70$, $df = 2$, $p < 0.0001$). On the other hand, more than half the youth admitted to residential care had already experienced inpatient care (53.9 percent), compared with about 40 percent of the youth admitted to inpatient settings and 26.9 percent of the youth admitted to outpatient settings ($\chi^2 = 22.11$, $df = 2$, $p < 0.0001$). Notably, 34.6 percent of the youth in residential care had been in residential care prior to their current admission, compared with 13.2 percent of the inpatient youth and 6.8 percent of the outpatient youth ($\chi^2 = 37.48$, $df = 2$, $p < 0.0001$).

The high percentage of youth with experience in multiple settings underscores the need for a strongly linked continuum of care to support timely and smooth transitions.

Referral Routes. As table 5 shows, referral routes to mental health care included families (35.8 percent) and social services (16.1 percent). Inpatient, juvenile justice, education, and mental health services each provided about one-tenth of the mental health care referrals for youth (10.7, 9.9, 9.6, and 9.9 percent, respectively). However, the most common routes to care varied significantly across service setting ($\chi^2 = 162.62$, df = 14, $p < 0.0001$). Youth in residential care were most likely to be referred from social services (37.3 percent) and juvenile justice (27.8 percent), whereas youth in inpatient and outpatient services were most likely to be referred from families (27.7 and 40.2 percent, respectively). In contrast to referrals to outpatient care, the rates of referral to inpatient care were higher from hospital settings (20.0 vs. 7.7 percent, respectively) and mental health care providers (22.1 vs. 6.4 percent, respectively). Referrals from the education system were highest among the outpatient youth (11.9 percent).

On the one hand, information on referral routes suggests that families participate in the identification of illness and pursuit of care for their children. On the other hand, referrals from a variety of other sources mean that efforts to engage families in treatment choices need to be purposefully activated by providers in all settings.

Conclusion

Although the extent of unmet need for youth in our country is unknown, evidence is emerging that youth continue to face significant barriers to receiving appropriate services and remain "stuck" in inappropriate levels of care (Goldberg, 2001), and that unmet need is likely to be greater among minority and uninsured youth than other youth (U.S. Department of Health and Human Services, 2001). Data used in this study show that the volume of services, as well as the numbers admitted per 100,000

Table 5. Referral routes for youth admitted to organized mental health care in the United States in 1997

	Admissions											
	Inpatient *(N = 286,176)*			Outpatient *(N = 962,813)*			Residential care *(N = 65,949)*			Total *(N = 1,314,938)*		
	%	(SE)	Sample N	%	(SE)	Sample N	%	(SE)	Sample N	%	(SE)	Sample N
Referral Routes												
Family-based[a]	27.7	4.6	130	40.2	1.6	1,158	8.9	2.8	28	35.8	1.5	1,316
Social services	8.9	1.6	68	16.7	1.3	499	37.3	4.7	198	16.1	1.1	765
Inpatient[c]	20.0	2.8	133	7.7	0.8	229	14.9	4.3	50	10.7	0.9	412
Education system	3.4	1.3	14	11.9	1.0	360	2.5	1.0	13	9.6	0.8	387
Juvenile justice[d]	10.5	1.5	84	8.5	0.8	233	27.8	5.7	122	9.9	0.8	439
Mental health-based[e]	22.1	2.7	142	6.4	0.8	178	6.9	2.0	26	9.9	0.8	346
Medical-based[b]	6.9	1.9	40	8.2	1.1	186	*	*	3	7.6	0.9	229
Other	*	*	3	0.4	0.2	10	—	—	0	0.4	0.2	13

Note: Youth population includes all children and adolescents under age 18. This table represents 3,732 observations (1,217,774 weighted observations) from the 1997 Client Patient Sample Survey. U.S. territories of Puerto Rico, Guam, and the U.S. Virgin Islands were excluded (21 observations).

[a] Family-based includes family, friend, and self.
[b] Inpatient includes general medical hospital, psychiatric hospital, inpatient alcohol or drug, emergency room, and residential care.
[c] Juvenile justice includes police and court.
[d] Mental health-based includes private practice mental health professional or outpatient mental health program.
[e] Medical-based includes general medical program or physician.

* Estimate is based on five or fewer sample cases or has a relative standard error of 50 percent or higher; therefore, it is not shown because it does not meet standards of reliability.

youth, have risen substantially between 1986 and 1997. The data demonstrate that inpatient service use has risen in that time period despite Federal and State reforms to create alternative community-based systems of care. Finally, the data reveal that youth using mental health services in 1997 had complicated needs that require interventions that combine clinical care with social and educational services.

The increase in the numbers and rates of service use over the decade has significant service implications. We have very little current knowledge of how treatment and staffing practices vary within and among inpatient, outpatient, or residential settings for youth. The deficiencies in knowledge are particularly troublesome in the residential treatment sector, where poor, displaced, and severely impaired youth are the majority. A major effort is needed to develop and test evidence-based practices for each of these settings. Second, we know very little about routine medication practices for youth with dual diagnoses. Evidence-based practices for this issue are yet to be developed and implemented. Finally, our understanding of the complexity of system linkages as they affect individual families and youth is modest. Practitioners in formal service systems must engage youth, families, and relatives in decisions about care, yet more than one-third of the youngsters in mental health services do not live with relatives. Developing strategies to ensure that families actively participate in making decisions for their children's mental health care is an urgent need to promote smooth transitions between care settings. Creating effective linkages between inpatient and outpatient care or inpatient and residential care or residential and outpatient care to provide treatment continuity will challenge clinicians and intervention researchers alike.

These national data help build a profile of recent changes in utilization of mental health services in the United States and the characteristics of youth in services, but they have a number of important limitations. Primarily, since the study excludes youth who are seen by private practitioners, it underestimates the number of youth admitted to mental health care in the United States. Secondarily,

the data are abstracted from existing medical records and thus are subject to standard problems associated with administrative data. Accuracy in record keeping may vary among settings. In addition, no detailed psychosocial history exists on the survey form. The distribution of problems might be different if we knew of problems other than ones that prompted entry into the service system; we only know that youth have *at least* the reported problems. There is consistency in the diagnoses reported in the survey, but reliability in reporting does not guarantee accuracy, so this too should be viewed with caution.

Despite these limitations, the data suggest that the mental health service system has expanded for young people with mental illnesses and that the vast majority of youth in the service system enter from socially stressed circumstances and with multiple problems requiring timely and effective intervention. To improve service delivery and treatment will require additional information on evidence-based practices and outcomes of children who are served in our mental health system.

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